

WARNING

Because of possible shock or fire hazards, connection of this instrument should be performed in compliance with the National Electric Code (ANSI C1) or any other requirements, or both, which may be applicable to the user.

Installation, operation, and maintenance should only be performed by qualified personnel.

TM-113000-G2-1

VOLUME 1 -- OPERATOR'S MANUAL

MODEL 626GP

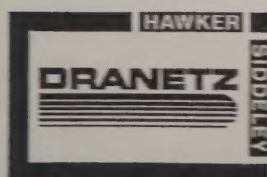
GRAPHICS PRINTER FOR THE SERIES 626

1 May 1986
(Rev. 9/1/89)
(Rev. B)

See opposite side relative to proprietary rights.

Note: Refer to Volume 2 (Service Manual) of
TM-113000-G2 for the maintenance information.

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IMPORTANT! CALIBRATION INTERVAL

The recommended calibration interval for this unit is once every 12 MONTHS.

We recommend that you return the unit to the factory for calibration. If you decide to do so, first contact the Dranetz Customer Service Department to obtain an authorization number.

Telephone Number: (201) 287-3680
Telex Number: 499-7808
TWX Number: (710) 997-9553
FAX Number: (201) 248-9240
Cable: DRANETZ

Then fill out the Repair/Service Order form enclosed in this manual and ship it along with the unit to the Dranetz Customer Service Department. (If this form is missing, ask the Dranetz Customer Service Department for a replacement.)



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The information in this manual has been reviewed and is believed to be entirely reliable. No responsibility, however, is assumed for any inaccuracies. The material in this manual is for information purposes only, and is subject to change without notice.



Figure 1-1. Series 626 Mainframe with Graphics Printer

VOLUME 1 OPERATOR'S MANUAL

MODEL 626GP GRAPHICS PRINTER FOR THE SERIES 626

SECTION I GENERAL INFORMATION

1.1 SCOPE

The manual for this product consists of two volumes. Volume 1, the Operator's manual, is divided into three sections: (I) GENERAL INFORMATION, (II) INSTALLATION AND OPERATION, and (III) OPERATIONAL TEST. Volume 2, the Service manual, contains the maintenance instructions and consists of four sections, IV through VII. (See Volume 2 for a description of these sections.)

1.2 INTRODUCTION

Volume 1 of this manual provides Operator's instructions for the Model 626GP Graphics Printer. (It will also be referred to in this manual as simply the "Graphics Printer.")

The Graphics Printer is designed for use with any Series 626 plug-in whose output can be graphically displayed.

1.3 APPLICATION AND PURPOSE

The Graphics Printer is a thermal printer designed for printing alphanumeric text and graphics data for applicable Series 626 plug-ins. The printer receives graphics and text information from a plug-in and then prints the graph. This graphic presentation of data is often easier to understand and to use when explaining environmental disturbances.

1.4 PHYSICAL DESCRIPTION

(See Figure 1-1 on the facing page for a Graphics Printer sitting on top of a Series 626 Mainframe.)

The Graphics Printer is specially encased in a modified Series 626 Mainframe cover for ease of transport and storage. The printer's J2 connector attaches to connector J2 on the rear panel of the Mainframe via an interface cable. The Graphics Printer can also be connected to an RS-232C compatible remote CRT terminal or teletypewriter during Series 626 remote control. This is done using an optional interface cable connected between the printer's J1 connector and remote device. The Graphics Printer is equipped with an internal Uninterruptable Power Supply (UPS) allowing it to operate for at least 10 minutes during a power outage.

1.5 TECHNICAL SPECIFICATIONS

The technical specifications for the Graphics Printer are listed in Table 1-1 below.

Table 1-1. Technical Specifications

PRINTER	
A. Type:	Thermal Printer
B. Directional:	Unidirectional Logic Seek, Text & Graphics
C. Dots per line:	320
D. Character Format:	5-by-7 in a 7-by-8 Cell
E. Dot Size:	0.23-by-0.20 mm (Height-by-Width)
F. Printing Width:	89.6 mm
G. Thermal Paper Width:	112 mm
	Thermal Paper Thickness: 66 um
H. Environmental Specifications:	
	Operating Temp: +10° to +40°C (50° to +104°F)
	Storage Temp: -20° to +55°C (-4° to +131°F)
	Humidity: 10% to 90% (non-condensing)
I. Power Requirements:	
	180 to 250 V rms at 47-450 Hz, 15W nom., 1/2A
J. Dimensions (approx.):	
	11 1/2" wide by 7 1/2" deep by 3" high
	(292 by 190 by 76 mm)
K. Weight (approx.):	4 lbs (1.8 kgs)
PRINTER COMMUNICATIONS PORT (J2)	
A. Type:	RS-232C Compatible (DTE Connector, J2)
B. Connection:	To the Series 626 Mainframe's Communications Port (DCE Connector, J2) via an Interface Cable
C. Baud Rate:	1200
PRINTER REMOTE COMMUNICATIONS PORT (J1)	
A. Type:	RS-232C Compatible (DCE Connector, J1)
B. Connection:	To a Remote Device's Communications Port (DTE connector) via an Interface Cable
C. Baud Rate:	1200

1.6 GENERAL OPERATIONAL DESCRIPTION

1.6.1 Printing Capabilities

The Graphics Printer is capable of printing both upper and lower case letters, numbers, punctuation characters (ASCII characters 32-126), and 8-bit graphics data.

1.6.2 Connections

1.6.2.1 Graphics Printer-to-Mainframe

An interface cable (Dranetz P/N 113004) links up the Printer to the Mainframe. The DTE end of the interface cable connects to the Mainframe's DCE communications port (connector J2); the DCE end connects to the Graphics Printer's DTE communications port (connector J2). This connection scheme is illustrated in Figure 1-2 below.

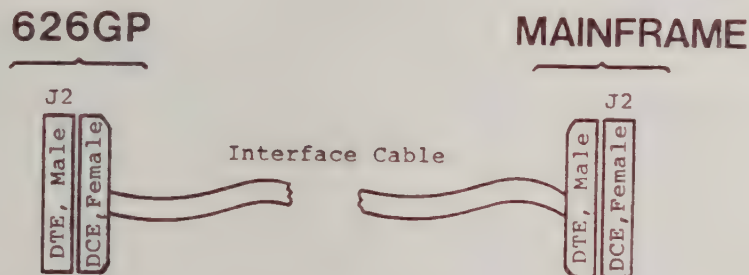


Figure 1-2. Graphics Printer-to-Mainframe

1.6.2.2 Graphics Printer-to-Remote Device

The Graphics Printer can also be connected to an RS-232C compatible remote device via an optional interface cable (Dranetz P/N 103506). The DCE end of the interface cable connects to the remote device's DTE communications port; the DTE end connects to the Graphics Printer's DCE communications port (connector J1). This connection scheme is illustrated in Figure 1-3 below.

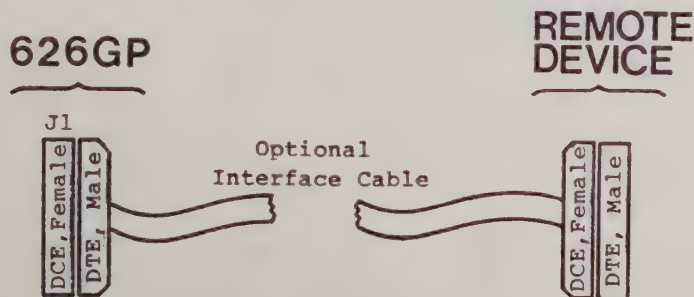


Figure 1-3. Graphics Printer-to-Remote Device

1.6.2.3 Power Cord Connection

The required power cord is a 3-pronged 230 volt ac power cord (Dranetz P/N 110726). The female end plugs into the socket on the Graphics Printer's front (top) panel; the male end plugs into an ac outlet configured for 230V operation.

NOTE

Both plugs MUST be connected to the same power source (by using a duplex outlet, power strip, etc.) to allow proper operation of the Graphics Printer.

1.6.3 Switches and LED Indicators

(See Figure 1-4 for the front panel illustration of the printer.)

There is a POWER ON/OFF switch, two PAPER STATUS LEDs (red for "OUT" and green for "OK"), and a PAPER FEED rocker switch on the front (top) panel.

When the POWER ON/OFF switch is turned on, one of the two LEDs will light, indicating the printer's paper status. If the green LED lights, the paper status is okay; if the red lights, the paper is out and must be replaced (refer to Subsection 2.2.1).

The PAPER FEED switch is used to advance the paper whenever a new roll is installed or when the Graphics Printer is not currently printing.

NOTE

This switch should NEVER be used while the unit is printing because it will affect the graphic printouts.

1.7 STANDARD ACCESSORIES

<u>Part #</u>	<u>Quantity</u>	<u>Description</u>
TM-113000-G2 Volume 1	1	Operator's manual
113004	1	Graphics Printer-to-Mainframe Interface Cable
110888	3	Thermal Paper
113020	2	Modified Flat-Top Keys
110726	1	Line Cord

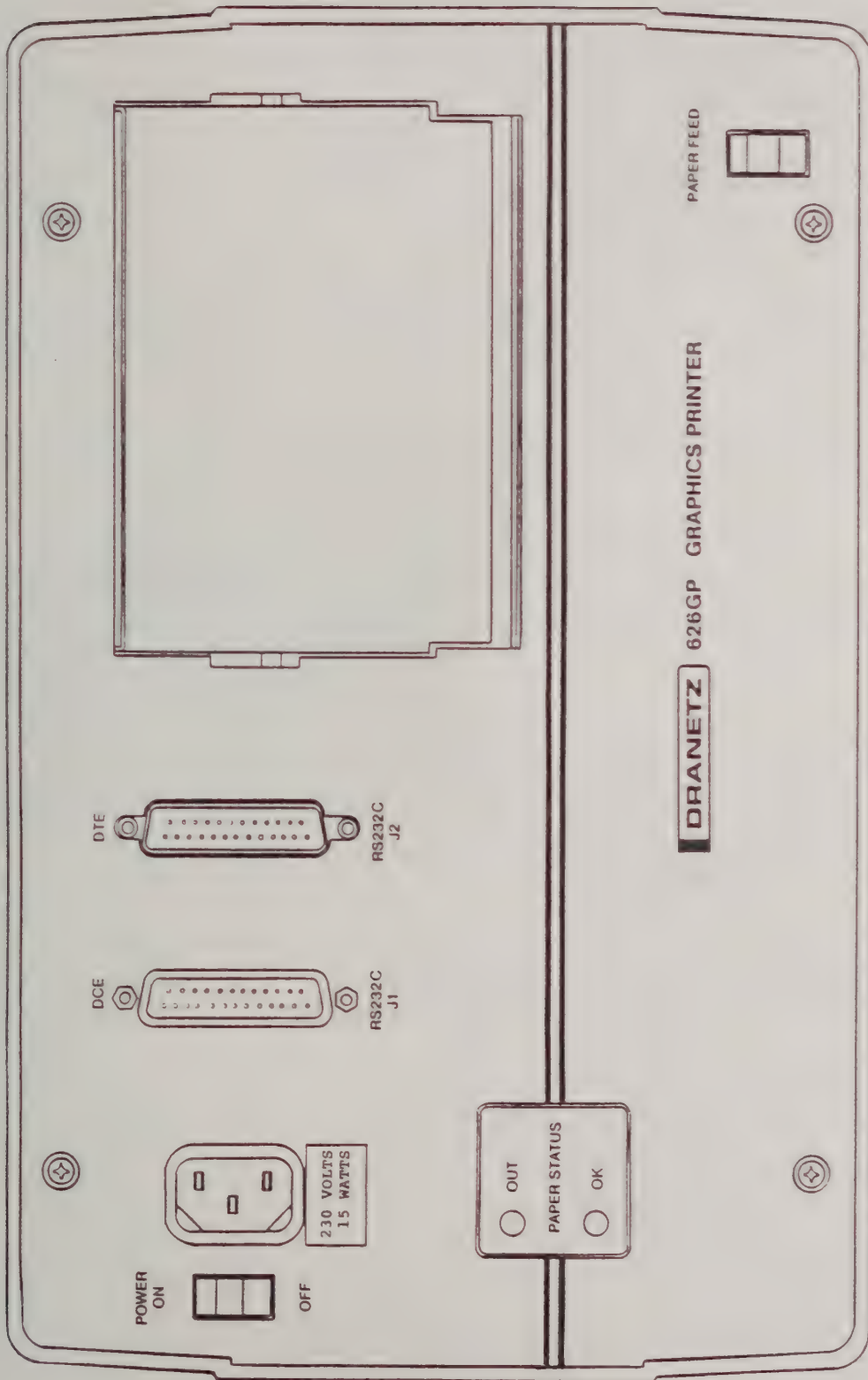


Figure 1-4. Typical Front (Top) Panel

TM-113000-G2

1.7.1 Reordering Thermal Paper

Thermal paper for the Graphics Printer may be reordered from:

Dranetz Technologies, Inc.
 Attn: Order Entry
 P.O. Box 4019
 Edison, NJ 08818-4019
 (201) 287-3680

You may also order thermal paper from your authorized Dranetz representative. Cartons of 12 rolls are available under P/N 110888C.

Note: Use of thermal paper other than P/N 110888 is not recommended.

1.8 OPTIONAL ACCESSORIES

<u>Part #</u>	<u>Quantity</u>	<u>Description</u>
TM-113000-G2 Volume 2	1	Service (Maintenance) manual
103506	1	Interface Cable for Remote Devices

You can receive the Volume 2 manual by completely filling out and returning the Control Sheet in your Series 626 Operating manual.

1.9 FACTORY REPAIR

When factory repair is required, proceed as follows:

1. Contact Dranetz Customer Service Department to obtain an authorization number for factory repair:

Telephone No: (201) 287-3680 TWX: (710) 997-9553

FAX: (201) 248-9240 Telex: 499-7808

Cable: DRANETZ

2. Fill out the REPAIR SERVICE ORDER form enclosed in the Series 626 Operating manual. Ship it along with the malfunctioning equipment to the Dranetz Customer Service Department.

SECTION II INSTALLATION AND OPERATION

2.1 GENERAL

This section contains the installation and operating instructions for the Graphics Printer.

2.2 INSTALLATION

The Graphics Printer is specially encased in a modified Series 626 Mainframe cover. To install the Graphics Printer:

- (1) Remove the Mainframe's front cover to reveal the Graphics Printer.

NOTE

Replace your existing key switch keys (if using the standard keys) with the modified flat-top keys (P/N 113020) which are designed for use in the Mainframe when the Graphics Printer is added.

- (2) Place the Graphics Printer, facing up, either on top (as illustrated in Figure 1-1) or alongside the Mainframe.
- (3) Attach the female end of the power cord to the 3-pronged connector on the Printer labeled "230 VOLTS 15 WATTS."
- (4) Attach the DCE end of the interface cable (Dranetz P/N 113004) to the DTE port (connector J2) on the printer; attach the DTE end to the DCE communications port (connector J2) on the Mainframe.

If using a remote device such as a terminal or teletypewriter:

- (5) Attach the DTE end of the optional interface cable (Dranetz P/N 103506) to the DCE port (connector J1) on the Graphics Printer; attach the DCE end to the DTE port on the remote device.

2.2.1 Installation of Thermal Paper

Whenever thermal paper requires replacement, the Printer's front panel red LED will light and the Mainframe's printer will automatically switch on and print the message "RS-232 LOST" on its own paper tape. All text (without graphics) will continue to be printed by the Mainframe's printer until the paper is replaced.

Replace the thermal paper as follows:

- (1) Turn off the printer. Lift up the printer door by pushing on its top; this will expose the paper roll.
- (2) Remove the empty paper roll from its rest by lifting it upwards.
- (3) Slide the empty roll off the spindle.
- (4) Remove any remaining paper from the printer.
- (5) Remove the holding tab from a new roll of paper.
- (6) Using scissors, cut a straight edge across the beginning of the paper.
- (7) Slide the new roll onto the spindle.
- (8) Insert the spindle with the new roll into the U-shaped slots on the hinged door. (Note: The paper should feed from the bottom of the roll, not the top.)
- (9) Turn on the printer. Feed the paper above the inner guard rest and between the small backwards C-shaped paper-out sensor on the right-hand side of the printer. (The red LED will go out and the green LED will light.)
- (10) Feed the paper about a $\frac{1}{4}$ inch into the paper feed slot and depress the PAPER FEED switch until the new paper comes into view.
- (11) Close the printer door while making sure the paper does not get caught.

2.3 OPERATION

Turn on the POWER ON/OFF switch and check the paper status LED. If the red LED is lit, install a new roll of thermal paper (see Subsection 2.2.1). If the green LED is lit, press the black [PRINT] push button on the Series 626 Mainframe. The Mainframe's printer should display "PRINTER OFF" (it is now disabled).

NOTE

Under normal operation, you will usually want the Mainframe's printer disabled, since its display is repetitive. If you do not, press the [PRINT] push button once more and the Mainframe's printer will display "PRINTER ON" (it is now enabled).

The Graphics Printer is now ready.

2.3.1 Sample Printout

Below is an actual printout from a Graphics Printer using input from a 626-PA-6030 3Ø AC Graphics Monitor plug-in. Descriptive information includes a multi-cycle waveform graph which pictorially describes the ac sine wave before, during, and after the disturbance. In addition, the disturbance is described alphanumerically by amplitude, duration, disturbance type, and time of occurrence.

Figure 2-1 illustrates a display of a 289 volt impulse which lasted 9 microseconds. (The impulse is near the center of the display.) The impulse occurred on channel 3, was a Phase A impulse, and occurred at 13:39:38.95 (1:39 PM).

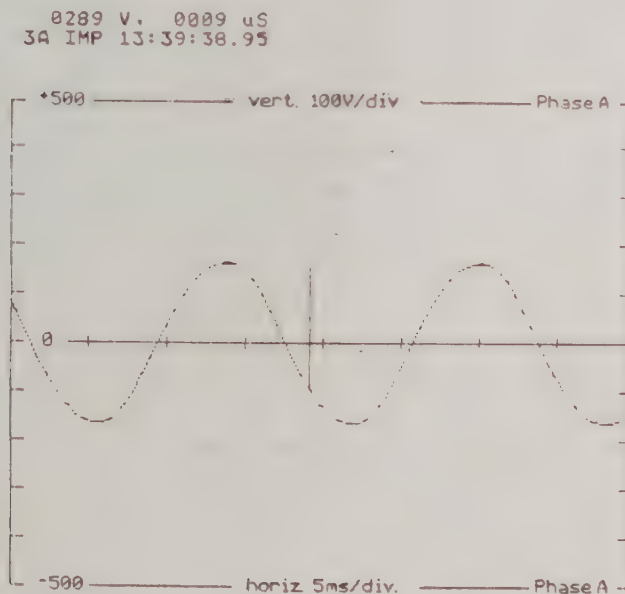


Figure 2-1. Sample Graphics Printer Display

2.3.2 In Case of Power Outage

If the ac power to the Graphics Printer is cut off at any time, the printer's own internal Uninterruptable Power Supply (UPS) will immediately take over. The UPS will allow the printer to operate, as normal, for at least 10 minutes.

SECTION III OPERATIONAL TEST

3.1 GENERAL

There is no operational test required for the Graphics Printer. If either the green or red LED doesn't light, or if the printer is operating erratically:

First, check your power source to be sure that it is operating.

Next, check all connections to and from the Graphics Printer to be sure that they are secure.

Next, check the Series 626 Mainframe's baud rate to be sure that it is set for 1200. (The Mainframe's baud rate must match the Graphics Printer's baud rate.)

If none of these steps solves the problem, refer to Subsection 1.9 for the factory repair procedure.

Also, if the Graphics Printer appears to be printing fuzzy or distorted characters, the printing head may require cleaning. Contact the Dranetz Customer Service Department for servicing instructions (refer to Subsection 1.9).

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